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EXAMINER

SHAPIRO, LEONID

ART UNIT

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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/779,306	SEGRE, MARC	
	Examiner Leonid Shapiro	Art Unit 2673	D
<i>-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --</i>			
<b>Period for Reply</b>			
<b>A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.</b>			
<ul style="list-style-type: none"> <li>- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.</li> <li>- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.</li> <li>- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.</li> <li>- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).</li> <li>- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).</li> </ul>			
<b>Status</b>			
1) <input checked="" type="checkbox"/> Responsive to communication(s) filed on <u>20 January 2003</u> .			
2a) <input checked="" type="checkbox"/> This action is FINAL.                    2b) <input type="checkbox"/> This action is non-final.			
3) <input type="checkbox"/> Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11, 453 O.G. 213.			
<b>Disposition of Claims</b>			
4) <input checked="" type="checkbox"/> Claim(s) <u>1-3, 6, 7, 9, 13-15 and 18</u> is/are pending in the application.			
4a) Of the above claim(s) _____ is/are withdrawn from consideration.			
5) <input type="checkbox"/> Claim(s) _____ is/are allowed.			
6) <input checked="" type="checkbox"/> Claim(s) <u>1-3, 6-7, 9, 13-15, 18</u> is/are rejected.			
7) <input type="checkbox"/> Claim(s) _____ is/are objected to.			
8) <input type="checkbox"/> Claim(s) _____ are subject to restriction and/or election requirement.			
<b>Application Papers</b>			
9) <input type="checkbox"/> The specification is objected to by the Examiner.			
10) <input type="checkbox"/> The drawing(s) filed on _____ is/are: a) <input type="checkbox"/> accepted or b) <input type="checkbox"/> objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).			
11) <input type="checkbox"/> The proposed drawing correction filed on _____ is: a) <input type="checkbox"/> approved b) <input type="checkbox"/> disapproved by the Examiner. If approved, corrected drawings are required in reply to this Office action.			
12) <input type="checkbox"/> The oath or declaration is objected to by the Examiner.			
<b>Priority under 35 U.S.C. §§ 119 and 120</b>			
13) <input type="checkbox"/> Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) <input type="checkbox"/> All    b) <input type="checkbox"/> Some * c) <input type="checkbox"/> None of: 1. <input type="checkbox"/> Certified copies of the priority documents have been received. 2. <input type="checkbox"/> Certified copies of the priority documents have been received in Application No. _____. 3. <input type="checkbox"/> Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received.			
14) <input type="checkbox"/> Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application). a) <input type="checkbox"/> The translation of the foreign language provisional application has been received.			
15) <input type="checkbox"/> Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.			
<b>Attachment(s)</b>			
1) <input type="checkbox"/> Notice of References Cited (PTO-892)		4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____	
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)		5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)	
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____		6) <input type="checkbox"/> Other: _____	

*Claim Objections*

1. Claim 9 is objected, as it depends on cancelled claim 8.

*Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-3, 6, 7, 9, 13-15, 18, rejected under 35 U.S.C. 102(e) as being anticipated by Abraham et al. (US Patent No. 6,069,615).

As to claim 1, Abraham et al. teaches a set of data processing systems operating utilizing a single set of input devices with: a single set of input devices including a pointing device (See Fig. 1, items 24, 26, in description See Col. 1, Lines 37-41 and Col. 2, Lines 14-16); at least two data processing systems sharing the single set of input devices, each data processing system having a logical display area logically arranged to have at least one boundary in common with

the display area for another data processing system, wherein a pointer driven cursor controlled by the pointing device is located within a display area for an active data processing system receiving input signals from the single set of input devices (See Fig. 2, items 12, 14, 24, 26 in description See Col. 2, Lines 32-41); switching means including an input controller coupled to single set of input device and to each of at least two data processing systems, wherein switching means, responsive to the active data processing system signaling movement of the cursor past a logical common boundary between two logical display areas, for automatically switching transmission of signals from the single set of input devices from the active data processing system to another data processing system corresponding to a display area sharing the logical common boundary with the display area for the active data processing system, wherein the other data processing system becomes the active data processing system (See Fig. 1, 2, items 12, 14, 24, 26 in description See Col. 2, Lines 3-67 and Col. 2, Lines 1-17).

As to claim 7, Abraham et al. teaches a method operating multiple data processing systems using a single set of input devices, (See Fig. 1, items 24, 26, in description See Col. 1, Lines 37-41 and Col. 2, Lines 14-16), said method comprising: an active data processing system receiving signals from a pointing device within the single set of input devices controlling movement of a cursor within a first logical display area for the active data processing system (See Fig. 2, items 12, 14, 24, 26 in description See Col. 2, Lines 32-41); responsive to movement of the cursor past a logical common boundary between the first logical display area and a second, logical display area of a inactive data processing system, active data processing system signaling an input controller coupled to active data processing system and coupled to the inactive data processing system; and in response to signaling by active data processing system,

input controller automatically switching transmission of signals from the single set of input devices from the active data processing system to inactive data processing system, such that the inactive data processing system becomes the active data processing system and input signals from the single set of input devices control movement of the cursor within the second logical display area (See Fig. 1, 2, items 12, 14, 24, 26 in description See Col. 2, Lines 3-67 and Col. 2, Lines 1-17).

As to claim 15, Abraham et al. teaches an automatic input switching device with:

An input controller; an input connection within the input controller for a single set of input devices including a pointing device; output connections within the input controller for at least two data processing systems; switching logic within the input controller at least two data processing systems transmitting input signals from the single set of input devices to an active data processing system (See Fig. 1-3, items 28, 30, in description See Col. 3, Lines 27-62); wherein the switching logic, responsive to receipt of signaling from the active data processing system indicative of movement of the cursor past a logical common boundary between the logical display area of the active data processing system and a logical display area for another data processing system, automatically switching transmission of signals from the single set of input devices from the active data processing system to another data processing system, wherein another data processing system becomes the active data processing system (See Fig. 1, 2, items 12, 14, 24, 26 in description See Col. 2, Lines 3-67 and Col. 2, Lines 1-17).

As to claim 2, Abraham et al. teaches a set of data processing systems, wherein the at least two data processing systems with an array of data processing system displays, each data

processing system display corresponding to a different data processing system having a logical display area (See Fig. 1, items 12, 14, 16, a-e, in description See Col. 1, Lines 7-10).

As to claim 3, Abraham et al. teaches a set of data processing systems, wherein the switching means further comprises a universal serial bus connection of the single set of input devices to each data processing system (See Fig. 2-3, item 28, in description See Col. 3, Lines 41-49).

As to claim 6, Abraham et al. teaches a set of data processing systems with a logical arrangement of display areas for at least two data processing systems which corresponds to a physical configuration of display devices for the at least two data processing systems, wherein logical display areas for data processing systems having physically adjacent display devices share a logical common boundary (See Fig. 1-2, items 12, 14, c, b, d, in description See Col. 2, Lines 32-49).

As to claim 9, it been objected as dependent on cancelled claim 8, for the purpose of this rejection it is assumed to be dependent on claim 7, Abraham et al. teaches a method with connecting the data processing systems to the input controller utilizing a universal serial bus (See Fig. 2-3, item 28, in description See Col. 3, Lines 41-49).

As to claim 13, Abraham et al. teaches a method with a logical arrangement of display areas for the data processing systems to correspond to a physical configuration of display devices for the data processing systems, wherein logical display areas for data processing systems having physically adjacent display devices share a logical common boundary (See Fig. 1-2, items 12, 14, c, b, d, in description See Col. 2, Lines 32-49).

As to claim 14, Abraham et al. teaches a method with arranging logical display areas for the data processing systems in an array of contiguous logical display areas (See Fig. 1-2, items 12, 14, in description See Col. 2, Lines 39-44).

As to claim 18, Abraham et al. teaches the automatic input switching device, wherein the output connections further comprise universal serial bus connection (See Fig. 1-3, items 18,20,24,22,28 in description See Col. 2, Lines 42-62).

***Response to Amendment***

3. Applicant's arguments filed on 01-20-03 have been fully considered but they are not persuasive.

Fanout switching unit 28 in Abraham et al. reference is not detects the need to transfer control between computers "upon inputs from single set of input devices" as indicated in Applicant's response on page 6, **but upon signals from the computers**, which monitors in application program the logical boundary between different computer's displays. Therefore, computers (active data processing system) signaling movement of the cursor past a logical common boundary between two logical display areas by activating input devices by events as double click, simply because fanout switching unit 28 connected to the input devices, not directly to computers (See Col. 3, Lines 10-17 and Lines 50-61 in Abraham et al. reference).

In the Abraham et al. reference does not have two embodiments. Abraham reference mentioned an alternative scheme, but there are no two embodiments of a method and system, as cited on page 6 of applicant's arguments.

*Conclusion*

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 703-305-5661. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703-305-4938. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

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Art Unit: 2673

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February 6, 2003



BIPIN SHUKLA  
SUPERVISORY PATENT EXAMINER  
TELEACOLOGY CENTER 2330

AUTOMATED KEYBOARD MOUSE SWITCH

## BACKGROUND OF THE INVENTION

## 5       1. Technical Field:

The present invention generally relates to improved concurrent use of multiple data processing systems and in particular to improved concurrent use of a single set of input devices (keyboard, mouse, etc.) enabling a user to interact with multiple data processing systems. Still more particularly, the present invention relates to an automatic keyboard/mouse switch enabling a single set of input devices to be employed by a user in interacting with multiple data processing systems without manual switching.

## 2. Description of the Related Art:

Many data processing system users require the simultaneous use of multiple data processing systems, each system having a separate display and operating either separately from the remaining data processing systems or collaboratively as part of distributed system. For example, financial traders often need to be able to view and control several different systems at the same time in order to both receive required information from multiple sources and to concurrently make trades. Multiple systems are also frequently required for other reasons, such as where each

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workstation performs a dedicated function, redundancy is desired, etc.

Of course, user work space limitations or other practical considerations often preclude or inhibit the use of separate sets of input devices (such as a keyboard and mouse or other pointing device) for each of several data processing systems being concurrently employed by the user. Instead, a single set of input devices shared and switched between the multiple data processing systems is preferable.

The current means for sharing input devices between multiple data processing systems generally requires the user to manually switch between the different data processing systems, either by operating a physical switch or entering a predefined keystroke sequence. Using a manual switch, the user can select the "active" data processing system (i.e., the data processing system to which user input through the keyboard or mouse is transmitted) by turning the switch to the appropriate position. Similarly, entry of a specific keystroke sequence allows the user to change the active system by signaling to the multiple systems that the change in active systems is desired.

All of the current solutions, however, require that the user interrupt the current task in order to manually perform the switch between multiple data processing systems. It would be desirable to provide a system, method, and computer program product which would allow the user to dynamically switch the active data processing system while continuing to work, and in the most unobtrusive manner possible.

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### SUMMARY OF THE INVENTION

It is therefore one object of the present invention to provide improved concurrent use of multiple data processing systems.

It is another object of the present invention to provide improved concurrent use of a single set of input devices (keyboard, mouse, etc.) enabling a user to interact with multiple data processing systems.

It is yet another object of the present invention to provide an automatic keyboard/mouse switch enabling a single set of input devices to be employed by a user in interacting with multiple data processing systems without manual switching.

The foregoing objects are achieved as is now described. A single set of input devices (keyboard, mouse, etc.) is employed with a plurality of data processing systems each having a separate display. The logical display areas for the displays are arranged in a contiguous array to have common boundaries, with an edge (e.g., a right boundary or a lower boundary) of one logical display area coinciding with an edge of another logical display area (e.g., a left boundary or an upper boundary). When a cursor controlled by a pointing device is moved past a logical display area boundary which the current active data processing system shares in common with another data processing system, the active data processing system to which input device signals

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are transmitted is automatically switched to the other data processing system. No manual switching or hot-key sequence by the user is required, and the active data processing system may be automatically switch among any of a number of data processing systems simply by moving the cursor across logical display area boundaries between the data processing systems.

The above as well as additional objectives, features, and advantages of the present invention will become apparent in the following detailed written description.

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#### BRIEF DESCRIPTION OF THE DRAWINGS

The novel features believed characteristic of the invention are set forth in the appended claims. The invention itself however, as well as a preferred mode of use, further objects and advantages thereof, will best be understood by reference to the following detailed description of an illustrative embodiment when read in conjunction with the accompanying drawings, wherein:

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**Figure 1** depicts a set of data processing systems in accordance with a preferred embodiment of the present invention;

**Figure 2** is a diagram of the logical arrangement of data processing system logical display areas for a set of data processing systems employing automated input device switching in accordance with a preferred embodiment of the present invention; and

**Figure 3** depicts a high level flow chart for a process of automatically switching input devices between data processing systems in accordance with a preferred embodiment of the present invention.